NEWSNEWSNEWS

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IV PRODUKT

*Air handling with focus on LCC*

# Ventilation – a green and sustainable investment

**World leaders at the UN have agreed on a crystal clear goal: A more sustainable and just world must be created, as quickly as possible. In order to achieve the common goal of Agenda 2030, everyone must take greater responsibility for the world we leave to future generations. It will require both commitment and major future investments that must be guided by sustainability and long-termism. Here the ventilation industry can play a significant role.**

Many people believe that it is costly to make sustainable choices but the fact is ventilation is a green investment which goes hand in hand with both profitability and good health. You can read more about this overleaf.

## Larger unit sizes give more possibilities

Despite a tumultuous spring, IV Produkt has been able to proceed as planned. The company continues to maintain a high rate of development and creates new innovative products that contribute to a better indoor climate.

On page 3, you can read about some of the latest developments, including the new unit sizes with compact dimensions, which create more opportunities to optimise energy use in projects.

## Renovation projects are facilitated by Easy Access

One of the latest innovations from IV Produkt, which you can read more about on pages 4–5, is Easy Access. This smart concept simplifies the transport and installation of air handling units. The customised modules with minimal dimensions result in fast installations and large cost savings. The nursing home in Lillestrøm, Norway benefited from the advantages where Easy Access was a successful part of the project.

## The architecture of historic buildings could be preserved

Three historic buildings are presented on page 6 to which IV Produkt has delivered air handling units where site entry and energy efficiency were of paramount importance. Read about the renovation project at the prestigious address in Hamburg on the same theme.

## IV Produkt believes in the future and continues to invest

In 2019, IV Produkt reached a major milestone when its turnover passed EUR 100 million, one year earlier than planned. The company is now aiming for a new target of EUR 200 million by 2026. The groundwork is now being laid to be able to expand, grow even stronger and at the same time promote sustainable development. On page 8, you can become acquainted with the comprehensive investment and growth plan that is about to be realised as the company looks to the future.

IV Produkt is now investing further in machinery as well as a warehouse and production area of approximately 5,500 sq m and the future looks bright.

## Contents

# Ventilation – a green investment, where health and profitability go hand in hand

**The sustainable development of our world is one of humanity's greatest challenges. Many people believe that it is costly to make sustainable choices, but the fact is that ventilation is a green investment which goes hand in hand with both good health and profitability. Therefore, the ventilation industry has vast opportunities to contribute to a sustainable future.**

## Three dimensions were an important starting point

When world leaders gathered in 2015 to develop a common agenda for global sustainable development, it was based on three dimensions: social, environmental and economic.
The result was Agenda 2030, with 17 global goals aimed at creating sustainable, inclusive and just development.


> By using more efficient ventilation units, Europeans will save EUR 26 billion annually.
>
> Improving efficiency saves as much energy as 40 nuclear reactors generate per year.

Investment in smart ventilation contributes towards achieving the 17 Global Sustainable Development Goals.

SOCIAL

## Improved health through a good indoor climate

We spend more than 85 percent of our time indoors, which places tremendous demands on ventilation and indoor climate for our health and well-being. The decisive factors for an optimal indoor climate are air volume, air quality and temperature.

According to a Danish research study, performance decreases by as much as 20 percent if the air temperature increases from 20 (optimal) to 25 degrees.

By replacing old air with fresh air from outside of the right volume, quality and temperature, we create a good indoor climate and thereby improve our health, performance and learning. Ventilation thus affects the social dimension of sustainable development.

The house illustrates the optimal state between outdoor air and exhaust air. 100 percent air exchange, well-dimensioned air circulation and temperature are important factors for us to feel good.

ENVIRONMENTAL

## Saves as much energy as 40 nuclear reactors

Today, as much as 40 percent of Europe's total energy usage goes into buildings.

By using more efficient ventilation units, Europeans will save EUR 26 billion annually, according to the European Commission. The efficiency improvements save as much energy as 40 nuclear reactors generate per year, and correspond to about the same amount as Sweden's total energy use.

Consequently, investing in energy efficient ventilation contributes to the environmental dimension of sustainable development and helps us to combat climate change.

ECONOMIC

## Profitable investment with more energy-efficient ventilation

According to the European Commission, the use of more efficient ventilation units will save EUR 26 billion annually.

If we break this large figure down into a genuine project, where a switch to more energy efficient air handling units is made, this results in an annual saving of 50 kWh/sq m. In the example, the AHUs supply an office building of 10,000 sq m. If the energy price is €0.1/kWh, this gives an annual saving of €50,000, which means that the property rises significantly in value.

Investments in energy efficient ventilation are profitable and contribute to the economic dimension of sustainable development.

AGENDA 2030

## Hand in hand for sustainable development

In a broader perspective, the ventilation industry can be involved and influence sustainable development based on social, environmental and economic dimensions.

With a good indoor climate, we improve our ability to perform, stay healthier and feel better. The ventilation industry can use its energy efficient products to reduce energy use, which in turn helps to phase out fossil energy sources. Green investments within ventilation go hand in hand with good health and profitability, which in a broader perspective contributes towards the realisation of our common goals in Agenda 2030.

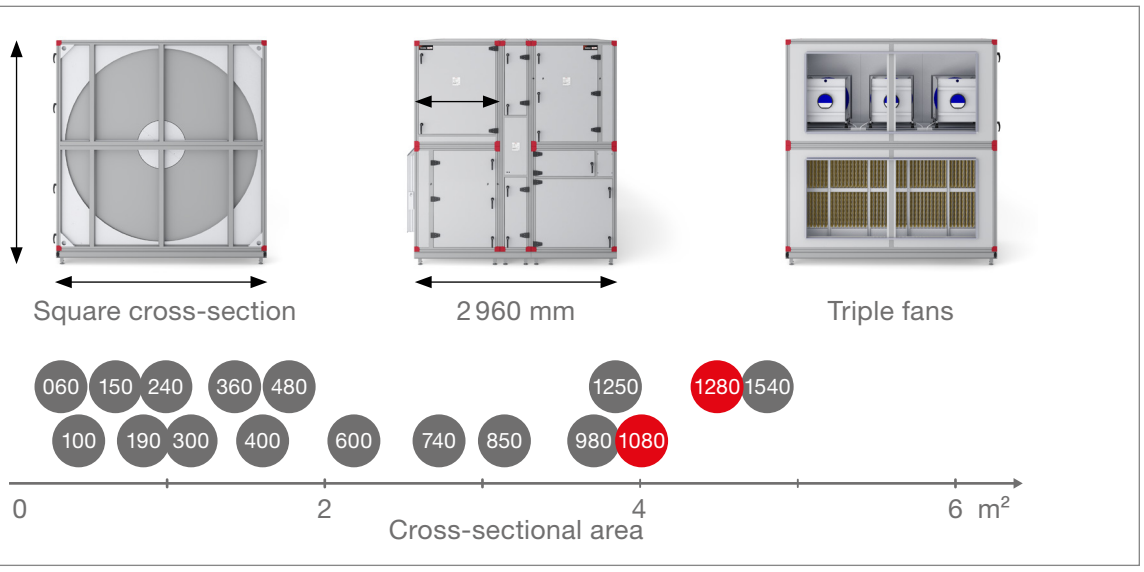
# Develop to satisfy market needs

**Today IV Produkt is the market leader in air handling units and has the highest rate of development in the industry. To create even greater flexibility in energy optimisation in projects, IV Produkt has developed its Envistar Flex series with more sizes that have compact dimensions.**

Jesper and Johanna from IV Produkt visit a project on site to be able to adapt the products to the needs of the market.

## Compact AHUs take up less space in technical rooms

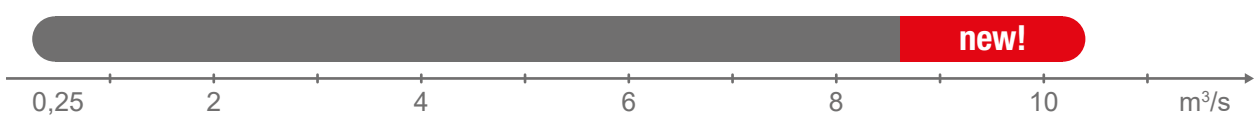
To obtain the highest possible energy efficiency from an air handling unit requires high heat recovery and energy efficient fans. IV Produkt has now developed two new sizes with air flow up to 10.4 $m^3/s$. What characterises the new sizes 1080 and 1280 is their compact dimensions. The square casing allows the size of the thermal wheel to be maximised for best energy recovery. In order for the AHUs to use as little space as possible, the company uses triple fans. This means the fan sections will be much shorter compared to if one large fan is used, and the overall length of the unit is only 3 metres.




IV Produkt's Envistar Flex series has now been supplemented with two additional sizes. Fan sections and thermal wheel together are only 3 metres long and can handle an air flow in excess of 10 $m^3/s$.

## Greater capacity for successful integrated solutions

Increased demand has meant that IV Produkt has also developed the integrated cooling unit EcoCooler and the integrated reversible heat pump ThermoCooler HP for the two new sizes. The major advantages of the company's integrated solutions are low installation and operating costs and that complex outdoor installations can be avoided. The AHUs are CE marked, tested and functionally tested before delivery. Size 1280 with EcoCooler now has a cooling power of up to 260 kW, while the reversible heat pump ThermoCooler HP has up to 175 kW.



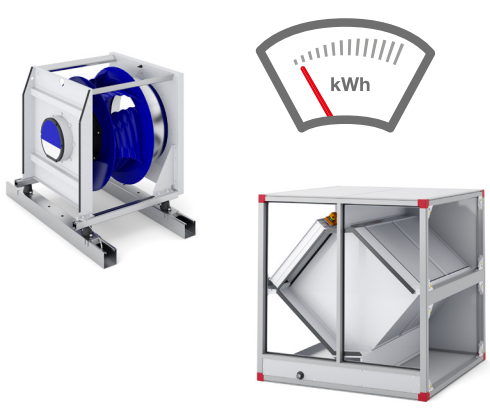

The capacity of EcoCooler and ThermoCooler has been increased with an air flow of up to 10.4 $m^3/s$.

## Components are optimised to meet demand

IV Produkt has now added new features to **Energy Watch** that help to optimise energy use. For example, the average SFP value, as well as the minimum and maximum air flow, can be measured by day, month or year, as well as from when the unit was first commissioned.

Also new is the counter-flow heat exchanger with an air flow of up to 6.8 $m^3/s$.

To optimise energy use, the company has also launched new, more efficient fans.

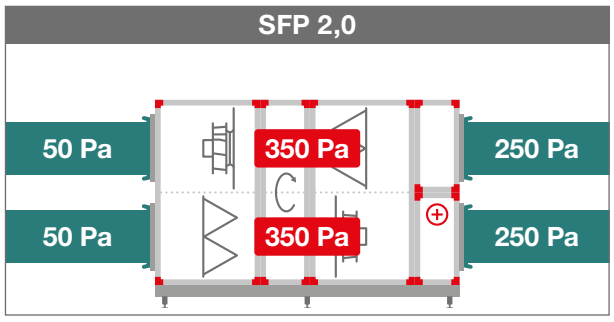



# KNOW-HOW

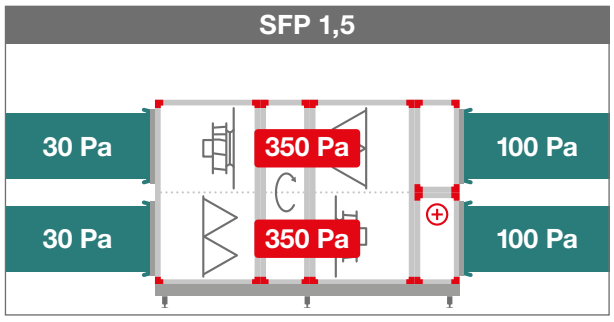
## How is the energy efficiency of a ventilation system improved?

**The energy efficiency of an air handling unit is measured in heat recovery and specific fan power, SFP. In order to reduce the energy consumption of a ventilation system, the pressure drop needs to be lowered, both internally in the unit and in the duct system.**

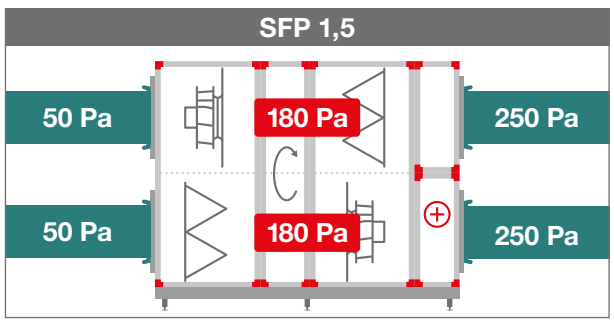
The examples below show options for how to lower the SFP from 2.0 to 1.5.



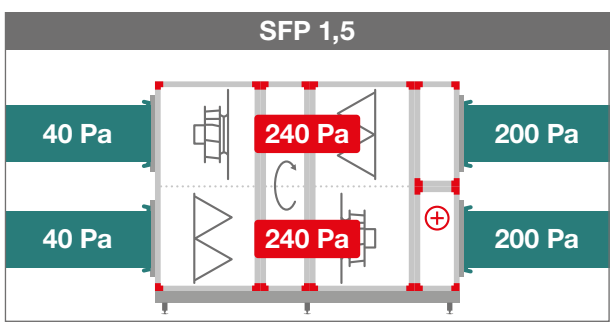

Installation with SFP 2.0.




In order to reach SFP 1.5 **the pressure drop in the duct system is lowered** through larger ducts, optimised area changes and gentle bends. This results in lower **total pressurisation** in the ventilation system.




If the existing duct system is used, **the air handling unit must increase in size** in order to reduce the internal pressure drop in the AHU and thereby reach SFP 1.5. This results in lower **total pressurisation** in the ventilation system.




This **lowers the pressure drop in the duct system** and **the unit is one size larger** in order to reach SFP 1.5. **Optimising both the duct system and the AHU** is necessary to reduce the ventilation system's energy use.

## Economically sustainable with larger AHUs

With an increased demand for energy efficiency, AHUs will, in many cases, become larger, while at the same time stimulating green and sustainable investments. Additional investment usually involves a payback time of 2–4 years, which makes it profitable to choose a larger-sized AHU.

# New concept for simple site transport

**When IV Produkt develops AHUs, a lot of effort is invested to make it easy to transport the units into the property. Thanks to its extensive experience, the company has developed many smart solutions that make it easy and cost-effective to position the air handling units on the installation site, without impacting on the building. The company is now launching the concept Easy Access, with more adaptations that further simplify the site transport of AHUs.**

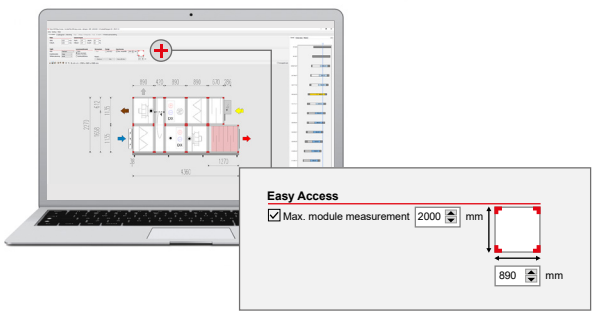
## Minimal modular dimensions and smart electrical connections

The new concept makes life easier for many installers and fitters. Thanks to minimal modular dimensions and smart electrical connections, prerequisites are created for easy entry and assembly, which in turn results in significant time and cost savings.

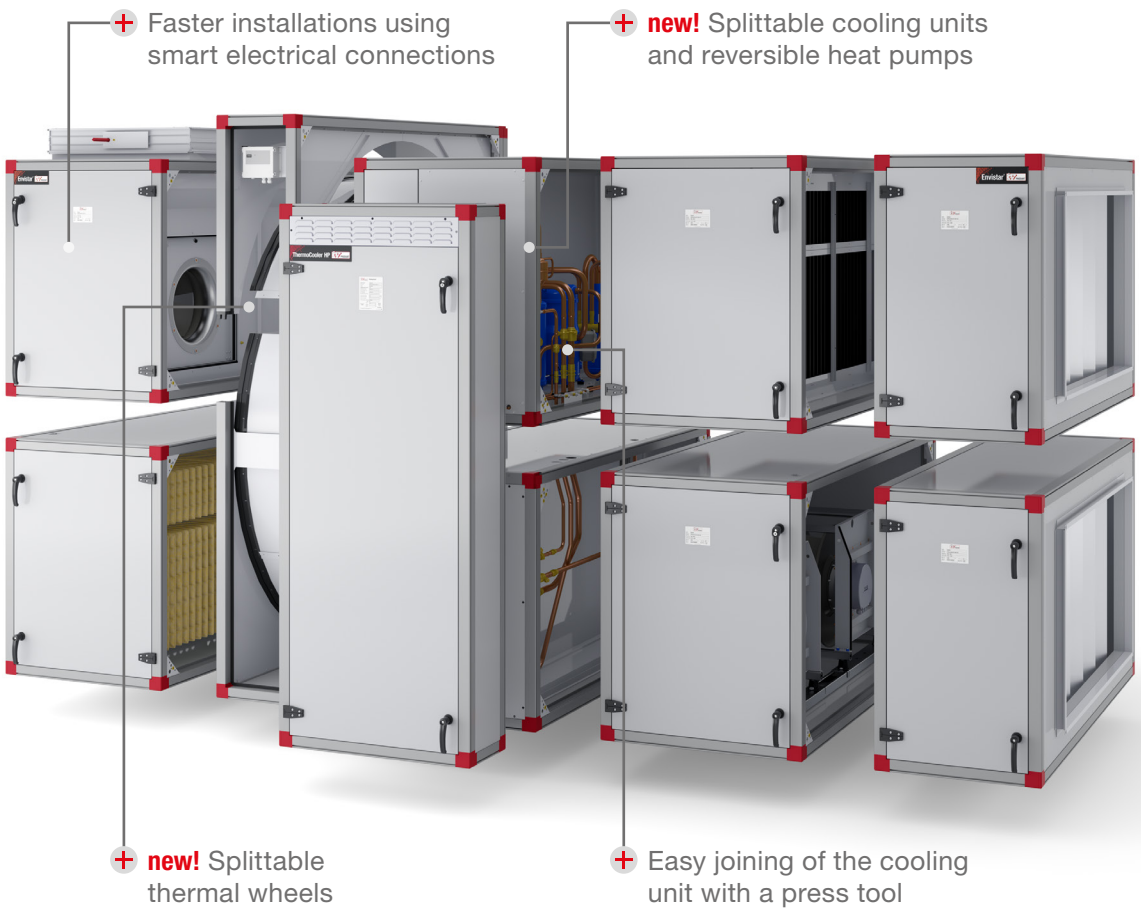
## Increased renovation rate in Europe

There is vast potential to save energy in Europe. It is estimated that a total of 40 percent of the EU's total energy use goes to existing buildings. According to the EU, it is likely that there will be a doubling of renovation work in Europe thanks to green investments. IV Produkt's new concept Easy Access has been developed to reduce costs and facilitate this type of renovation work.

## Easy customisation of module dimensions in IV Produkt Designer




The required maximum module dimensions for the AHU projects can be specified in the product selection program IV Produkt Designer. The program then automatically divides the unit into smaller module parts, which are adapted to the specified dimensions, where possible.




easy access

## Time and cost savings

The aim of Easy Access has been to transport as large units as possible through a normal door with a width of 90 cm. Thanks to this, units with an air flow of approximately 4.5 $m^3/s$ can now be transported through a door with standard dimensions. When assembled, this results in units that are 2.2 metres wide, 2.5 metres high and up to 6 metres long.

Easy Access gives great savings in time and costs compared to delivering the units in flat packs and assembling on site. Installation is faster, and hole making or other impacts on the building can be avoided.

The split counter-flow heat exchanger is transported through a 90 cm wide door opening.

Pär and Ola from IV Produkt transport a size 600 Envistar Flex AHU with integrated reversible heat pump ThermoCooler HP through a standard door.

## Cooling units, reversible heat pumps and counter-flow heat exchangers are also splittable

IV Produkt's integrated cooling units EcoCooler and reversible heat pumps ThermoCooler HP can, with the new concept Easy Access, be supplied in split versions. The assembled unit is tested in our production facility in Växjö, to ensure optimal performance and CE marking before delivery. Service personnel, certified by IV Produkt, join and fill the cooling circuit and perform installation leakage testing on the installation site.

With the new concept, counter-flow heat exchangers, with an air flow up to 1.8 $m^3/s$, can be split to pass through a door with standard dimensions.

Watch the videos on ivprodukt.com/easy-access

# Successful project with Easy Access

**The Skedsmotun residential treatment centre in Lillestrøm, Norway has more than 100 residents and staff and is normally visited daily by relatives. Pleasantly temperate air now flows through all rooms. The indoor climate has been made possible through the replacement of air handling units during the spring of 2020.**

**IV Produkt delivered seven air handling units equipped with thermal wheels, and the integrated reversible heat pump ThermoCooler HP with stepless control of cooling and heating power. An air handling unit with plate heat exchanger and integrated EcoCooler cooling unit was installed for the main kitchen. The plant rooms are located in the middle of the building, which complicated the changeover. In order to facilitate the site transport, therefore, the decision was made to use IV Produkt's new concept: Easy Access.**

The splittable, integrated reversible heat pump ThermoCooler HP is placed into position.

## Easier site transport and major cost savings

After many years of problems and high costs for the existing air handling units and cooling units, the municipality decided that it was time to replace them. In order to solve the problems and ensure the best possible indoor climate, all units were replaced in the spring of 2020. The requirements for the new units were that they would be able to both heat the ventilation air and cool the building, while reducing energy use. It was important that the building was not damaged when positioning the new units. The perfect solution was Envistar Flex with ThermoCooler HP in Easy Access design, where the unit is delivered in modules that can be easily taken through a standard-sized door.

"Site transport was especially important as the plant rooms are located in the middle of the building. It would have been very difficult and costly to make holes in walls or the roof to position the AHUs. The route to the plant rooms is made up of narrow passages and stairs, which made transport difficult," says Roger Pettersen from Lillestrøm Municipality.

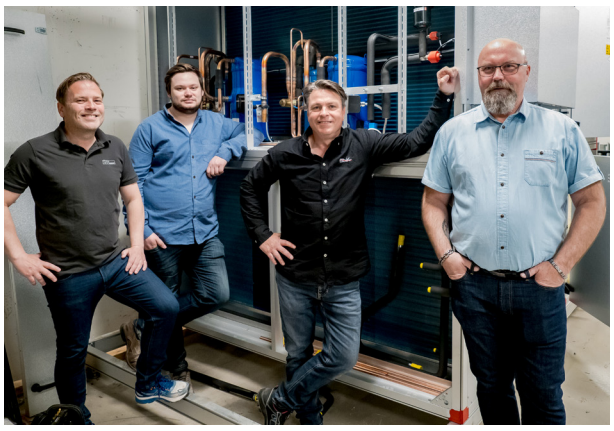
The alternative for Roger and the contractor Roy Anstensen from Solheim og Larsen Klima AS was to build the AHUs on site. However, this would have been both costly and complicated.

"When IV Produkt's service department looked at the building and its conditions, they suggested Easy Access," says Roger.

## Energy saving and reduced maintenance costs

The new concept made it possible to easily take in the units in modules without having to tear down any walls or open up the roof. This enabled faster installation that saved both time and money.

"Thanks to Easy Access, the installation time was halved and in turn this generated significant cost savings," adds Roger Pettersen. With the new units, Roger estimates that energy use will decrease by 1.1 million kWh annually, solely on the operation of the air handling units. That's the equivalent of as much energy as an electric car needs to run 5.5 million kilometres, which is 138 laps around the earth. He also says that the heating system output will be reduced by 550 kW and circulate 20 $m^3/h$ less water. This in turn leads to additional reductions in energy use. Another bonus is that maintenance costs are lower. The payback time for the installation is estimated to be five to six years.



From the left: Lars Lerdalen, IV Produkt AS, Roger Pettersen, Lillestrøm Municipality, Roy Anstensen, contractor Solheim og Larsen Klima AS, and Ivar Lofthus, Lillestrøm Municipality.


Employees from IV Produkt and Solheim og Larsen Klima AS cooperate to put the split thermal weel in place.

## Team effort from start to finish

Roger Pettersen is very pleased with the collaboration with IV Produkt and the contractor Roy Anstensen from Solheim og Larsen Klima AS, who have been with us all the way. Lillestrøm Municipality, in consultation with IV Produkt's Norwegian sales representative Lars Lerdalen, has used AHUs from IV Produkt on several occasions in the past. Roger particularly praises the reversible heat pump ThermoCooler HP, which with its frequency controlled compressors and electronic expansion valves is something out of the ordinary on the market. With ThermoCooler HP in an Easy Access version, the pipes in the compressor circuit can be easily connected with a press tool instead of being soldered together. Roy concludes that this has been a team effort by both Swedes and Norwegians from start to finish.

# A hat-trick of historic buildings

## The art of protecting cultural heritage during renovation

**As time passes, the use of a building may change. In addition, restoration of the interior, façades and technical installations may be necessary for a building to continue to meet changing needs and personal preferences. How can the requirements for renovation and restoration be met, while preserving the building's cultural heritage? This was precisely the objective when IV Produkt supplied air handling units to three technical renovations of beautiful old buildings.**

National Museum with a view over the Royal Palace and Kungsträdgården. Photo: Hans Thorwid

## National Museum

A stone's throw from Kungsträdgården and with a façade facing the Royal Palace, Stockholm's National Museum is an impressive sight. The beautiful museum from 1866 blends in perfectly with its surroundings of royal buildings and stately architecture from an older Sweden. With the passing of time, the years of wear and changes in use began to take their toll. In 2014, therefore, work was started on what would be a major renovation project.

### The art of finding balance

"Finding the balance between safeguarding a 150-year-old icon of cultural heritage and developing the building to meet new requirements has been our main challenge," says Ingrid Eiken Holmgren, Director General of the National Property Board of Sweden.

IV Produkt was entrusted with delivering 26 air handling units from its Flexomix series to all parts of the National Museum's operations. In the exhibition halls with many valuable and fragile objects, extremely stringent demands were placed on the temperature and humidity of the air. Therefore, air handling units with functional sections for dehumidification of the outdoor air and rotary heat exchangers with high moisture recirculation and tempering of the supply air were installed.

### Simple site transport

Thanks to smart solutions from IV Produkt, the old, beautiful façade from the 19th century has been preserved. The hope now is that the National Museum will stand proudly in all its glory with a good indoor climate for many years to come.

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Photo: Mattias Ek, Stadsmuseet

## Östermalms Saluhall

The planning of Östermalms Saluhall began as early as June 2015, and it quickly became clear to VVS-konsulten that the restoration would be a challenge. The market hall was 'Blue-marked', which means it has 'extremely high cultural historical value', and was inaugurated in 1888.

### Flexible range

The contract form was a divided contract, which meant that everything had to be planned in detail. IV Produkt's wide range of smart solutions created the opportunity to find suitable AHUs despite the confined spaces. On 5 March 2020, it was finally time for the opening. The delivery consisted of 15 smaller and two larger air handling units from the Flexomix series.

## Medborgarhuset

Medborgarhuset was inaugurated in 1939 and for many years has housed activities for the inhabitants of Stockholm. The premises currently offers everything from a swimming pool to sports hall, restaurants, offices and a library. Over a period of two years, the building has undergone renovation and reconstruction. Planning started in 2013, and in autumn 2020 it was time for reopening.

### Energy efficient air handling units

IV Produkt's wide range of energy efficient air handling units has made it possible for the premises to be provided with a good indoor climate. A total of 22 air handling units were delivered in different sizes with several smart functions.

Photo: Nyréns Arkitektkontor

# Envistar Top in the heart of Hamburg


A pleasant indoor climate is generated by thirty units from IV Produkt's Envistar series in the prestigious building at Ballindamm 17 in Hamburg. Photo: QUEST Investment Partners

**A 13,000 square metre property in a premium location in Hamburg is currently being renovated. IV Produkt's subsidiary in Germany is supplying a total of 30 air handling units – most with the integrated cooling unit EcoCooler.**

## Ballindamm 17 – a prestigious address

In 1901 and 1902, the architects Lundt & Kallmorgen designed the office building built in the heart of Hamburg, right next to Inner Alster, for the trading and shipping company A.C. de Freitas & Co. The project developers at QUEST Investment Partners, who have many years of experience in developing high-quality real estate projects, began the renovation of the listed building in early 2019.

"The property at Ballindamm 17 comprises a total of approximately 13,000 square metres of rental space, spread over seven floors. At the moment, almost everything has been removed from the inside. The surfaces will be structured in a modern way and the premises will be equipped with new building technology," says Mirco Richter, CEO of K+J Haustechnik.

## Many challenges require good solutions

In the future, approximately 1,800 square metres of high-quality office space will be available on each floor. Areas for retail and eateries are planned for the ground floor. The new building technology also means modern ventilation and comfort cooling of the premises.

"Renovation projects on this scale often present major challenges for us as consultants: the site transport, installation and placement of air handling units, duct routing and placement of cooling units and other technologies are often troublesome. In the Ballindamm project, we chose a decentralised solution for the air handling units with integrated cooling," explains Rainer Feddersen, CEO of Petersen-Ingenieure.

## Splittable modules simplify site transport

24 AHUs from the Envistar Top series, equipped with the integrated cooling unit EcoCooler, are used in the project to ensure a pleasant indoor climate in rental premises on individual floors. All air handling units have separate control technology, which means that the energy cost can be invoiced individually.

"The units can be split into 790 mm wide modules and are easily transported through narrow stairwells, lifts and doors," says construction manager Christopher Weitschies, describing the on-site benefits.

## Envistar Top frees up space

Thanks to the connections on the top of the air handling units, they require very little installation space. With their low noise level, they can be placed in recesses and storage rooms behind soundproof doors. The larger air handling units for the retail and restaurant areas are installed in the basement. Here, too, IV Produkt has delivered the units in split design to simplify site transport.

## Many benefits with EcoCooler

Large and small air handling units in the Ballindamm project are equipped with EcoCooler – the integrated, stepless cooling unit. The AHUs deliver 100 % outdoor air that is cooled to a comfortable supply temperature, creating the best possible indoor climate.

Pipe routing, pumps and complex outdoor-installations are not required. Roof areas and interior gardens can be used as attractive terraces and courtyards. In addition, each AHU at Ballindamm 17 can be controlled and monitored via the cloud service, IV Produkt Cloud. The completion of the new, magnificent building at Inner Alster is planned for mid-2021.

The space-saving Envistar Top with EcoCooler was used for several installations in the project.

# Faith in the future of IV Produkt

**In 2019, IV Produkt reached a turnover of EUR 100 million – one year earlier than the target. In this context, a new ambitious target was set of 200 million by 2026. To achieve the new target, a comprehensive investment programme was launched at the beginning of the year.**

IV Produkt has had many successful years, which created the conditions for continuous reinvestment in the company.

"It is committed employees and investments that enable our continued expansion," says CEO Mattias Sjöberg.

Mattias at IV Produkt looks ahead and has a strong belief that energy saving and good indoor climate will be important factors for sustainable development, and thus dares to venture and invest even more in the future.

## Investments create opportunities for continued expansion

The construction of new production and warehouse facilities totalling 5,500 square metres is in full swing, and is expected to be completed by the beginning of 2021.

The company has also made extensive investments in machinery, trucks and a warehouse management system, which will increase productivity.

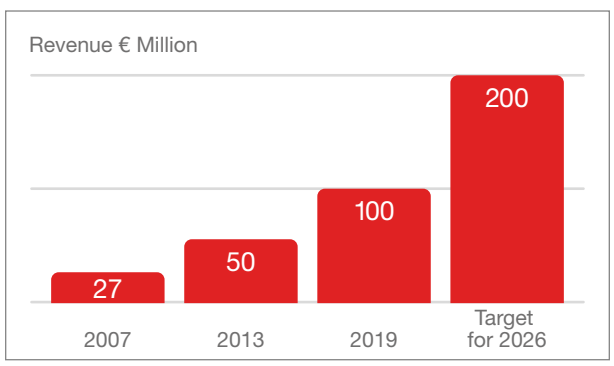
The latest expansion project at IV Produkt will result in 5,500 square metres of new space for offices, warehouse and production.

## Success breeds success

With several years of successful ventures behind us, IV Produkt is well aware of the importance of reinvesting to create long-term success.

"It's the previous investments that have created the conditions for us to continue growing," says Mattias.

With previous experience of ambitious targets that have been exceeded, IV Produkt has good faith in again achieving a successful outcome. In order to continue the positive trend in the future, growth outside of Sweden is very important. "We have gained a good foothold in the markets in which we are present and our market share is increasing significantly," adds Mattias.




IV Produkt has doubled its turnover every six years since 2007. The next ambitious target is EUR 200 million, by 2026.

## Doubled renovation rate and green deal in Europe boost demand

Today, buildings account for 40 percent of Europe's energy use. European initiatives will promote green investments that improve the energy performance of buildings, and a doubling of the pace of renovation is expected. Energy efficient ventilation will therefore be a necessity for reducing the Earth's resources. This is also fully in line with the Global Sustainable Development Goals.

## Bright future for the ventilation industry in three dimensions

When Agenda 2030, including the Global Sustainable Development Goals, was drawn up by the UN, it was based on three dimensions: social, environmental and economic. The ventilation industry can contribute to sustainable development through these three dimensions.

A good indoor climate affects our well-being and our ability to optimise our performance, which means that ventilation contributes to the social dimension.

Saving energy preserves the Earth's resources, and that is where the environmental dimension comes in. This in turn impacts the economic dimension, as operating costs are reduced and the value of the properties increases.

"We believe the future is bright for the ventilation industry and therefore dare to venture and invest," concludes an optimistic Mattias.

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## Would you like to join us? – Send us a spontaneous application today!

Are you ambitious and do you love to develop, challenge and be challenged? Do you want to come to work every day in the company of forward-thinking, positive people who genuinely care about one another? Regardless of whether you are an engineer, electrician, consultant, sales person, installer, service technician, or simply interested in indoor climate – send us a spontaneous application today!
**www.ivprodukt.com/vacancies**

**We look forward** to seeing you!

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